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ABSTRACT

A social impact assessment which focused on a Hawaiian community's evaluation of social change and development is reported. The research occurred on the island of Moloka'i, which depends largely on imports for its energy sources, although it has a number of natural sources (biomass, wind, solar, and water power). Specifically, the study identified values of the community so that alternative energy options could be related to the residents' preferred way of life. The Galileo methodology, which translates differences in values to physical distances on computer-generated maps, was used to compare value structures of 219 residents with those of decision makers (the governor, state legislators, heads of major economic interests, and county officials). Of the 15 value concepts appearing on the questionnaire, the principal values separating residents and decision makers are "slow pace" and "Hawaiian culture" (crucial for residents) and "education and jobs" (emphasized by decision makers). Generally, residents endorsed electricity self-sufficiency as long as the values they embraced were not endangered. These results give indications of the scale, timing, and types of energy development that residents will find most acceptable. Used with other data, these cross-community differences can provide the context for dialogue among social groups concerning perspectives on possible futures. (KC)

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Community Values as the Context for Interpreting Social Impacts

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SO 014 463

ABSTRACT

This paper demonstrates an approach to Social Impact Assessment which is based on the value structure of the potentially impacted community. It therefore acts as an alternative to the recent criticism of social impact assessment by Heidinger and Schnaiberg (1980) that social impact assessments are frequently conducted without regard to the local community's social evaluation of the effects of introduced social change and development. In addition, this paper shows how to analyze different groups by a detailed comparison of the value structure of community residents and decision makers.

1. INTRODUCTION

Meidinger and Schnaiberg (1980) have criticized the standard practice of Social Impact Assessment (SIA) on many grounds. One of their most telling attacks concerns the estimation of social impact and the heretofore undifferentiated analysis of impact on the social system in which development takes place.

> It is as if an impact were good or bad, very good or very bad, <u>in itself</u>, without reference to social groups (Meidinger and Schnaiberg, 1980: 522, emphasis in the original).

Since we take the management of social impact to be a primary purpose of planning for technological change, and since we view values as defining the difference between the "objective" consequences of social change and the impacts on the individuals who experience the change, the exploration of values should be the first step to inform planning at the community level. Therefore, we present here the results of an SIA data collection process that uses community values as the basis for collecting, organizing, reporting, and interpreting the results. In addition, this paper also shows how to compare the value structures of two or more groups which might affect or be affected during the course of development projects in the impacted community. Hence, our use of values is much more than a "conceit" (Meidinger and Schnaiberg, 1980: 512) but is a focus to organize SIA data and a basis for assisting members of the impacted community to articulate their value positions.

2. THE PROBLEM: ENERGY DEVELOPMENT IN HARMONY WITH COMMUNITY VALUES

2.1 THE ENERGY SITUATION IN HAWAII

Hawaii is unique among the 50 states in that is derives over 90 percent of its energy from petroleum imports. However, it is possible that its natural resources can provide some respite from the currently bleak situation. A transition to local renewable resources is being forced upon this island state as a result of its present reliance upon an increasingly limited and politically external petroleum reserve. Such an economic and social change requires sound social policy analysis and planning.

2.2 MOLOKA'I AND ENERGY SELF SUFFICIENCY

This paper reports on one part of a comprehensive attempt to plan a socially desirable energy future for the island of Moloka'i, one of the eight islands making up the State of Hawaii. With the exception of the private island of Niihau, Moloka'i has the most concentrated population of pure and part-Hawaiians in the State. The nearly 50 percent Hawaiian population, together with the Filipino, Japanese, and Chinese brought in to work on the pineapple plantations, are employed mainly in agri- and aquacultural occupations, tourism, and related service indistries.

The way of life on Moloka'i is relaxed and friendly with family homesteads and a spirit of "Ohana" (an extended kin-

ship group) prevailing. Kaunakakai is the main center of population and its port receives almost all the island's goods. From foodstuffs to construction materials, petroleum products to light bulbs, Moloka'i imports almost everything. The resulting higher cost to live on the island is seen by many as a positive thing in that it tends to deter "outsiders" from coming and settling.

Unfortunately for the residents, the energy problem on Moloka'i is especially severe. An aging diesel generating station and the high cost of electricity are both a problem and a blessing. Residential customers face electricity rates of 22 cents per KWH, the highest in the nation. Simultaneously, the island has the poorest socio-economic conditions in the State. Unemployment is high (greater than 15 percent), salaries are low (the average income is less than 85 percent of Oahu salaries which rank 26th of the 50 state averages), and the general cost of living (10 percent higher than Oahu) ranks second highest of the 50 state averages.

However, the island has a number of natural energy options (e.g. wind, biomass, solar, water power) although each is expensive to initiate. More important to the residents is the impact that various options will have on the lifestyle they hold so dearly. The purpose of the present study was to identify the values of this community so that decisions about specific alternative energy options could be based upon the resident's preferred way of life.

3. ENERGY PLANNING ON MOLOKA'I

Moloka'i is one of the three inhabited islands that make up Maui County. Since the county is the lowest political unit in the state, most of the decision making affecting Moloka'i is made off-island, by the Mayor's office in Maui or by other county and state political and planning figures. Planning for Moloka'i (and the state of Hawaii as a whole) usually involves community participation after the fact. That is to say, the planning agency, department, or consultant firm develops a proposal and then takes it out to the community for approval. SIAs, cusory at best, are sometimes part of the proposal <u>if</u> environmental impact statements have been required. This occurs when the shoreline is involved and is thus "protected" by the Coastal Zone Management Laws. However, rarely is any attempt made to include the community in the identification, design, and selection of alternative proposals. As a result, the community is forced into a position of having to constantly defend its own lifestyle or physical character in the face of pressures for change or growth.

Like most small communities, Moloka'i finds it difficult to challenge a well-paid legal staff representing a land owner or developer. This is especially true if community sentiment, community values and the like are <u>not</u> grounds for a challenge to a development proposal[1]. So when it comes time to render a decision about a planning proposal, econom-

is rationales for development weigh heavily against opponents of development. Because the land development process excludes the general public from the creation of project proposals and community participation is viewed as an us-them dichotomy, confrontation is invited from the beginning.

In practice, planning for Moloka'i occurs mostly off-island. Community participation on Moloka'i is delegated to a single planning advisory committee appointed by the Mayor or Maui County Council and directed "to provide the input needed by the consultant to define issues, problems, and concerns of those interested in the community". Empirical information regarding the community's viewpoints is based largely upon a survey conducted in 1979 by a private consultant hired by the Planning Commission. Opportunities for regular involvement by the community in the development of alternate proposals for Moloka'i's future are non-existent. The result of this situation has been the evolution of activist oriented community organizations such as Malama Mana'e (Preserve the East End). While it might be argued that activist participation has been effective in voicing the concerns of those who wish to protect the existing lifestyle and environment, such confrontation has increased polarization in the community and emphasized the us-them frame of mind[2]. While confrontation has proven to be an avenue of change, we believe that more community change occurs under less socially polarized conditions. Understanding the pro-

cesses and social structures which promote the articulation of alternative potential futures is the general focus of our research.

3.1 SIA ON MOLOKA'I: A NEW BEGINNING?

As noted above, social impact assessment in Hawaii has often been merely an afterthought to many development decisions, so that the social ramifications of public policies were poorly researched and not seriously considered. But within the past few years, the State of Hawaii has committed itself to exploring seriously the social impacts of attaining energy self-sufficiency. Because of its small population (about 7000 residents) and precarious situation, the State's initial efforts are centered on Moloka'i. There was public recognition, at least, that if the island were to become electrically self-sufficient, such an accomplishment "must be a Moloka'i program, matching the needs and desires of the Moloka'i residents" (Masuda et.al.,1979:43). This awareness was reinforced in 1981 when Maui County received a grant from the National Center for Appropriate Technology to develop a Community Energy Management Plan for Moloka'i. In announcing the award, Senator Spark Matsunaga (D-Hawaii) said:

> This award edges Moloka'i one step closer to energy self sufficiency and should be instumental in insuring that the development of alternative sources of energy is accomplished in harmony with the wishes and needs of the local community. (Press release, 4/22/81).

This paper is concerned with the discovery and structuring of the values of the residents of Moloka'i from both a public policy planning and a methodological perspective.

4. DATA COLLECTION AND ANALYSIS METHODS

To measure the community's values and their attitudes toward energy self sufficiency we used the Galileo methodology. We chose Galileo (see Woelfel and Fink, 1980) for a number of reasons. First, we knew from colleagues at the East-West Center that Galileo had been used in Hawaii as well as other Asian and Pacific nations with success. Such past experience had shown that it is especially useful for populations with poor language skills. Second, Galileo is an inherently multivariate methodology, unlike the usual approach to measuring attitudes and values which is based on single items or researcher constructed scales (see Upshaw, 1968). We also felt that Galileo's ability to pictorially display the results would make communication of the results easier to the community[3].

Another reason for selecting the Galileo approach was its potential for the study of social change. Galileo can be administered to the same population later in time, and we will be able to see the movement (if any) in the relationships between the values. Most importantly for the purposes of this research, Galileo begins by identifying the values of the community from community residents themselves, not as

arbitrarily selected constructs provided by the researchers. On this basis alone we grant it greater validity than empirically derived attitude measures.

4.1 GALILEO QUESTIONNAIRE CONSTRUCTION

Questionnaire construction began by identifying the concepts which Moloka'i residents use to define life on their island. To do this, we first interviewed 26 residents from a broad range of the population in terms of ethnicity, occupations, and political views. A list of the positions held by these respondents is given in Table 1.

Table 1 here

The interviews (which ranged in length from one to two and one half hours) consisted of a series of open-ended questions regarding the quality of life on Moloka'i and energy self sufficiency. A content analysis of the interviews reduced respondents' perceptions to a list of 13 major concepts used to define life on the island (see Table 2).

Table 2 here

Reviewing the concepts chosen by residents suggests values of rural island communities and the traditional value of Hawaiian and Filipino heritage. These became the basis of the Galileo questionnaire which trained, local volunteers administered to a random sample of the entire community.

The questionnaire also included three other concepts not derived from the initial interviews. We included the concept ME to assess the salience, centrality, and importance of the basic concepts to the respondents (Woelfel and Fink, 1980: Chapter 7). We also added the concept of ELECTRICITY SELF SUFFICIENCY to determine how important this goal is for residents and how it relates to other community values. Finally, we inserted the concept of the PREFERRED WAY OF LIFE to determine the distance between each concept and the respondent's goals for the future.

4.2 THE COMMUNITY SAMPLE

We drew a random sample of Moloka'i residents using the Moloka'i Electric Company records of residential customers. A total of 219 surveys were completed in March of 1981 by community volunteers who were trained in the appropriate interviewer techniques.

4.3 THE DECISION MAKER SAMPLE

Since many policy decisions about energy and social change are made by persons not on the island, we also needed to measure their perspectives about the preferred way of life and energy self sufficiency on Moloka'i. A group of 29 decision makers was therefore selected to include political, financial, and business representatives from the islands of Maui, Moloka'i, and Oahu, as shown in Table 3.

Table 3 here

These decision makers, including the Governor, state legislators, heads of major economic interests, and county officials, were interviewed using the same survey instrument, modified only as to residence and years living on Moloka'i.

4.4 THE GALILEO ANALYSIS

Galileo translates differences between ideas or concepts into physical distance. In other words, the Galileo method makes it possible for ideas or concepts to be mapped in physical space. To do this, Galileo requires that each concept be paired against all others and evaluated by each respondent in terms of the distance between them[4]. Galileo then computes the average distance for each concept pair and produces a data matrix that has these average distances between

each concept in the off diagonal and zeros in the main diagonal[5].

The next procedural step is to examine the matrix of average distances among the concepts. Average distances between the concepts can be compared and all the concepts ranked in distance (or similarity) from a particular concept of interest. While these pair-wise comparisons do not take all the data into account simultaneously, they do provide good initial estimates of the importance of each value when compared with a criterion such as the PREFERRED WAY OF LIFE.

Examing the average distances between each pair can be informative, but the **value structure** can be analyzed when all the distances are taken into account at the same time. Galileo finds the principle components of the average distance matrix after transforming it into a centroid scalar products matrix[6]. Principle components reduces the observed distances (or covariances in the usual application) between a given set of concepts into a lesser number of variables which will be (a) orthogonal and (b) explain the maximum possible distance observed in the matrix (Johnston, 1972:322-331). Galileo uses these new variables as coordinates to map the concepts in space. These maps are easy to interpret since closeness between concepts in the maps reflect similarity and distance reflects dissimilarity. That is, **in the Galileo maps there is a direct translation of conceptual similarity into physical proximity.**

5. RESULTS

5.1 RESIDENTS COMPARED TO DECISION MAKERS: SIGNIFICANT DIFFERENCES

Table 4 shows all the value pair distances for which these are significant differences between decision makers and residents. Residents are personally closer to RURAL and LIVING OFF THE LAND than decision makers who generaly live in urban Honolulu. Decision makers are personally closer to TOURISM and ELECTRICITY SELF SUFFICIENCY. The set of differernces relating to JOBS suggests that decision makers see this value as more closely related to TOURISM and DEVELOPMENT than do residents. Since the jobs which evolve from the tourist industry are not always filled by local people, this difference is not surprising. The differences relating to LAND show that decision makers see LAND, DEVELOPMENT, and TOURISM more closely related than do residents.

5.2 PRINCIPLE COMPONENTS ANALYSIS

We show the results of the principle components analysis in two ways: (1) by computing the actual distances between each concept in three dimensional space and presenting these distances in a format similar to a mileage chart used in highway maps[7] and by (2) plotting the concepts in a three dimensional representation. However, we find the analysis of an individual concept's relation with others to be easier

using the distance chart and the conceptual clustering of concepts to be easier through the examination of the plots[8]. The distance charts for residents and decision makers are given in Table 5 and 6, while the corresponding value maps for residents and decision makers are shown in Figures 1 and 2[9].

Tables 5 and 6, Figures 1 and 2 Here

Looking at the charts and plots we see a remarkable similarity between the two groups' value structures with the exception of the location of the ME concept. For residents, the ME is closest to FAMILY TOGETHER, SLOW PACE, HAWAIIAN CULTURE, and EVERYBODY KNOWS EVERYBODY. For decision makers, the ME is closest the EDUCATION, FAMILY TOGETHER, JOBS, and EVERYBODY KNOWS EVERYBODY. In short, the principle values separating residents and decision makers are SLOW PACE and HAWAIIAN CULTURE (crucial for residents) and EDUCATION and JOBS (emphasized by decision makers).

It is also interesting to note that the values farthest from the ME for residents and decision makers are the same: TOURISM, HIGHER PRICES, and DEVELOPMENT. However, the respective ranked distances are different across the two groups (e.g. TOURISM is the value furthest from the ME for residents while HIGHER PRICES is the value furthest from the ME for decision makers).

In general, however, the relative location of the ME concept appears to be the most substantial value difference between decision makers and residents. Given the responsibilities of the decision makers, this is not particularly surprising. What is more interesting is that the structure of the remaining substantive concepts appears quite similar for both groups. Note, for example, the consistent isolation of SPORTS, LAND, and ELECTRICITY SELF SUFFICIENCY. This is an important finding and one that could provide a basis for increased communication (if not cooperation) between these two groups.

6. VALUES DATA AS POLICY, RESEARCH, AND POLITICAL INSTRUMENTS

As a more concrete example of the use of this sort of data, in this section we focus on three concrete uses of values data, to plan for future conditions, to facilitate data analysis, and to mobilize community and political interests.

6.1 ELECTRICITY SELF SUFFICIENCY AND ENERGY PLANNING

The values survey results shows the placement of the concept of electricity self sufficiency within the community value structure. It appears relatively isolated from the other values, indicating that it is not a very meaningful concept at the present time. As is true for the rest of the State's population, Moloka'i residents are uncertain about the personal costs and benefits in becoming self sufficient. Since

ELECTRICITY SELF SUFFICIENCY was located in between the two major cluster of values, it appears that residents are neither opposed to nor quick to embrace a concept which they are not convinced will enhance their ability to preserve cherished community values. Indeed they are somewhat wary that alternate energy development may mean increasing tourism or types of development they oppose while increasing the cost of living they already find difficult to bear.

Residents report that the values most closely associated with ELECTRICITY SELF SUFFICIENCY are EDUCATION, JOBS, and LAND. This suggests that the people of Moloka'i are interested in learning about various alternate energy options and their economic ramifications. Futhermore they not only believe that alternate energy development may mean more local jobs but that they must also begin to prepare for the skills required in potentially new occupations.

Most important, perhaps, is that the community desires to become more self sufficient that it is now. No other value showed a greater discrepancy between what is and what would be desirable (the PREFERRED WAY OF LIFE) in the future than LIVING OFF THE LAND. We interpret this as an endorsement of the principle of electricity self sufficiency and those energy alternatives that would permit this while not endangering values also embraced. The close proximity of ELECTRICITY SELF SUFFICIENCY and LAND shows that residents think alternative energy options will require the utiliza-

tion of land resources. Indeed, the subsequent use of hay and biomass to generate electricity on Moloka'i is consistent with this expectation.

The survey results can also be used in devising appropriate stategies for achieving the goal of self sufficiency. Besides the information about the relationship with JOBS and EDUCATION, the locations of the other values give indications as to the **scale**, **timing**, and **types** of energy developments that residents will find most acceptable. For example, the important part that rural life, knowing your neighbors, and the family play on Moloka'i may suggest that the scale of energy developments should not be great; the location of SLOW PACE and HAWAIIAN CULTURE indicates that moderation should be excercised in the introduction of new technologies; and the disenchantment with TOURISM, DEVELOPMENT, and HIGHER PRICES may represent the community's opposition to energy options exploited for the benefits of non-residents or to those which do not reduce the relative price of electricity. On the positive side, those options which dovetail with cherished values (those close to the ME or the PREFERRED WAY OF LIFE) stand to be supported by the residents of the island.

6.2 VALUES, DATA ANALYSIS, AND REPORTING FORMATS

The values survey was only one part of the total research enterprise. In addition to the values survey, we collected 68 time series of standard socio-economic indicators for the island and forecasted these using Box-Jenkins techniques. To present both the values results and the forecasts, we devoted one chapter to each of the 13 substantive value concepts. In each chapter, we showed the results of the value survey and presented the forecasts of time series data which were related to that value[10]. For example, the chapter on ELECTRICITY SELF SUFFICIENCY presents the average distance between ELECTRICITY SELF SUFFICIENCY and ME and the PREFERRED WAY OF LIFE for all population subgroups as well as the decision makers and residents. Then it presents the relevant time series data concerning ELECTRICITY SELF SUFFICIENCY: total KWH consumed, liquid fuel tax revenues, the number of residential electricity accounts, average monthly residential sales, installed capacity of the generating plant, and barrels of diesel oil consumed by Moloka'i Electric Company. Thus, the 13 values organize 13 of the 20 chapters of the report in a systematic presentation format. Other chapters cover the logic of social impact assessment, the planning and management context for decision making on Moloka'i, research methods, and suggestions for research opportunities on Moloka'i in the future.

6.3 VALUES AND THE MOBILIZATION OF COMMUNITY INTERESTS

One of the advantages to the Galileo method is its ability to perform multiple group analysis to compare value structures (either within the community or as a comparison with other groups). These subcommunity and cross-community value differences can provide the basis and context for dialogue among social groups concerning their perspectives on possible futures. Thus this approach can articulate differences with or across communities and provide a common vocabulary to express value positions.

The process has begun on Moloka'i. The Mayor of Maui presented the research to the Governor of Hawaii as an example of sound community research. The Governor, in turn, has used to study as part of a justification to allocate half a million dolllars to a solar water heating program on the island. Local residents and special interest organizations are also using the research for their own purposes. Hawaii Legal Aid has asked local residents (and the senior author) to testify before the Planning Commission using the finding of the report. The Office of Hawaiian Affairs, the state agency responsible for representing the interests of the State's predominately Hawaiian residents, has also endorsed the research as a valuable planning tool for enhancing the interests of Native and Part-Hawaiians. Certainly these uses (as well as those mentioned above) indicate some of the potential of the **social** SIA process as idealized by Meidinger and Schnaiberg.

7. CONCLUSION

We think that our experience on Moloka'i suggests that SIAs carried out and interpreted from the basis of community values are possible and must be given serious consideration in the future as energy developments (among others) become more politicized and a even more critical factor in local economic development planning. Moloka'i therefore not only represents a case study in the attainment of energy self sufficiency that could be an example to the rest of the nation (and to other island communities throughout the world), but it is also an experiment in consciously facing the social challenges of the energy crisis.

8. NOTES

[1] The Coastal Zone Management Laws, which have been designed to protect the shoreline at least, are about to be weakened by Federal revisions. This has been about the only avenue to incororate community values into the development planning process. In our research report, we suggested that the entire island, small and ecologically/socially fragile as it is, be declared a special management area under the Coastal Zone protection.

[2] For example, see the article "Moloka'i", National Geographic (August 1981: 196-219).

[3] We find the community can understand the practice of conceptual mapping. To enhance their ability, we constructed three dimensional models of the value structure of community residents and have used these successfully in our presentations on the island.

[4] In most Galileo studies, one pair of concepts acts as the reference concept by which all other pairs are evaluated. This reference or "criterion pair" acts as a standard unit of measure for all the responents. During the interviewer training, however, it became clear that the inclusion of a reference pair would probably cause confusion in the minds of the respondents. So the idea of the reference pair was discarded and each respondent could utilize their own scale (ranging from 0 through infinity) in assigning distance scores to each concept pair. This required that all individual responses be

later rescaled to a common metric. We derived a simple weighting method which transformed all the scores into a distribution with a mean of 50. This rescaling left zero values (assignments of perfect similarity) unaffected (see Canan and Hennessy, 1981: Chapter 4).

[5] This matrix is K*(K-1)/2 elements in size for each respondent where K is the number of concepts.

[6] A centroid scalar products matrix is a transformation of the distance matrix such that the origin of the new matrix is at the geometric center of the K dimensional space (see Woelfel and Fink, 1980; Rummel, 1970:511).

[7] For the plots, we have assigned symbols to each of the concepts. These are also displayed on the distance charts along with the concept name.

[8] It should be clear that both presentations contain exactly the same information.

[9] To compute the comparison map, Galileo analyzes each data set separately and then rotates one solution to the fixed coordinates of the other group. This rotation ceases when the sum of squared distances between the identical concepts of each group are minimized (Woelfel and Fink, 1980).

[10] Actually, the values data were presented in a more detailed manner, with four additional intra-community comparisons being made as well as the resident-decision maker comparison. These intra-community comparisons do not show many differences in value structure because of

the homogeneity of the Molokaʻi population, but there is no reason such subpopulations (based either on analytic distinctions or naturally occuring ones) could not be made in other communities. For our purposes, we made intra-island comparisons between residents in the three major population clusters of the island, residents who supported population growth versus those who did not, residents with electricity consumption greater than 500 KWH versus those with less, and residents supporting limited growth on the island versus residents supporting more diversified growth.

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TABLE 1

PEOPLE INTERVIEWED
ROUND I OF VALUES STUDY

1. Realtor
2. Physician; Protect Kaho'olawe 'Ohana
3. Director, Maui Office of Economic Opportunity
4. General Manager of Kalua Koi Development Company
5. Retired resident, active in community affairs
6. Speech therapist; Maui County Water Board
7. Manager, First Federal Savings and Loan
8. President, Molokai Community Services Council
9. Former Maui County Planning Commissioner; Molokai Electric Company Officer
10. Kupuna (revered elder in the Hawaiian community)
11. Resident since 1920's
12. Rancher
13. Alu Like employee
14. Teacher's aide
15. Hospital administrator
16. Active parent in education system
17. Nurse
18. Counselor
19. Director, Queen Liliuokalani Children's Center
20. Member, Office of Hawaiian Affairs
21. Office Manager, Del Monte Corporation
22. Resident of Maunaloa
23. Treasurer, Molokai Electric Company; Molokai Hosptial Board
24. Hawaiian minister
25. Semi-retired consultant to Molokai Electric Company
26. Minister, Baptist Church

TABLE 2

I. VALUE CONCEPTS DERIVED FROM ROUND I INTERVIEWS

RURAL

HAWAIIAN CULTURE

SLOW PACE

LIVING OFF THE LAND

EVERYBODY KNOWS EVERYBODY

EDUCATION

TOURISM

DEVELOPMENT

JOBS

SPORTS

HIGHER PRICES

LAND

FAMILY TOGETHER

II. ADDED CONCEPTS

ELECTRICITY SELF-SUFFICIENCY

PREFERRED WAY OF LIFE

ME

TABLE 3

DECISION MAKERS INTERVIEWED

OAHU

Public:

Governor of Hawaii
Department of Land & Natural Resources, Asst. Director
Department of Hawaiian Home Lands, Chairperson
State Energy Office, Director
Public Utilities Commission, Chairperson
State Land Use Commission, Chairperson
Department of Agriculture, Chairperson
State Representative
State Senator (2)
Department of Planning & Economic Development, Director
Hawaii Natural Energy Institute, Director

Private:

Hawaii Visitors Bureau, President
Hawaii based air lines, Manager
Development Corporation on Molokai, Director
Construction industry, vice-president
Alternate energy corporation, officer
Banking institution, officer

MAUI

Public:

Maui County Mayor's Office, Managing Director
Maui County Council, Chairperson
Maui County Planning Commission, Chairperson
Maui County Mayor's Office, Assistant for Energy Planning

Private:

Banking Institution, Officer
Developer, Partner

MOLOKAI

Public:

Utility Company, Officer

Private:

Major Land Owner, Manager
Hotel Industry (2)
Realty Company, President

TABLE 4

SIGNIFICANT DIFFERENCES IN VALUE PAIR DISTANCES:

MOLOKAI RESIDENTS VERSUS DECISION MAKERS

CONCEPT PAIR	RESIDENTS (N=219)	DECISION MAKERS (N=29)	DIFFERENCE FROM RESIDENTS
RURAL-YOU	24	53	29
EKE-SPORTS	31	43	12
EKE-JOBS	38	52	14
EKE-TOURISM	70	87	17
SPORTS-DEV	68	93	25
SPORTS-LOL	63	88	25
SPORTS-ESS	77	104	27
JOBS-EDUC	37	21	-16
JOBS-DEV	43	20	-23
JOBS-LAND	45	33	-12
JOBS-H PRICES	57	36	-21
JOBS-TOURISM	45	25	-20
HWNCUL-DEV	74	95	21
HWNCUL-H PRICES	76	97	21
EDUC-LOL	46	74	28
DEV-LAND	47	21	-26
DEV-ESS	58	37	-21
LAND-TOURISM	63	34	-29
LOL-YOU	32	52	20
TOURISM-YOU	89	54	-35
ESS-YOU	41	27	-14

TABLE 5

DISTANCES IN 3 DIMENSIONAL SPACE

GROUP: RESIDENTS ONLY

YOU	0														
PREFERRED WAY OF LIFE	0	9													
SLOW PACE	0	19	24												
ELECTRICITY SELF-SUFFICIENCY	0	55	52	44											
TOURISM	0	74	84	85	85										
LIVING OFF THE LAND	0	92	44	20	21	45									
HIGHER PRICES	0	76	37	58	71	78	77								
LAND	0	42	35	68	38	31	40	39							
DEVELOPMENT	0	56	41	78	34	44	78	74	71						
FAMILY	0	61	32	63	32	68	50	23	18	22					
EDUCATION	0	25	41	39	58	44	58	37	45	35	32				
HAWAIIAN CULTURE	0	38	14	71	31	67	29	75	57	12	19	25			
JOBS	0	41	11	29	32	37	49	51	48	39	49	43	40		
SPORTS	0	43	36	39	29	72	60	83	57	74	74	47	37	42	
EVERYBODY KNOWS EVERYBODY	0	30	35	9	34	10	65	32	63	36	68	57	21	23	29
RURAL	0	24	48	58	19	56	32	86	39	73	38	84	71	19	34	41

Figure I

VALUE MAP
All Moloka'i Residents

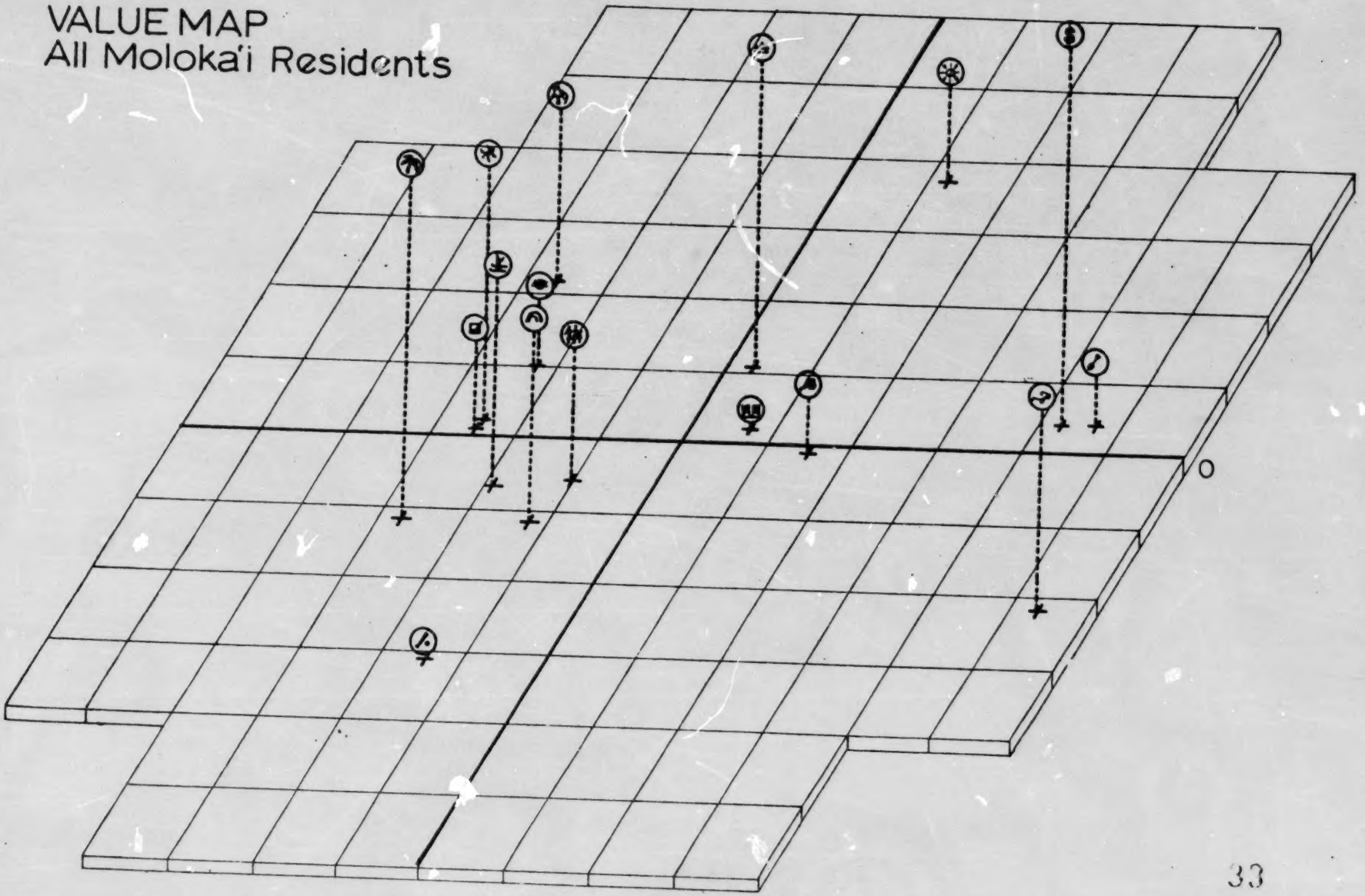

TABLE 6

DISTANCES IN 3 DIMENSIONAL SPACE

GROUP: DECISION MAKERS

	RURAL	EVERYBODY KNOWS EVERYBODY	SPORTS	JOBS	HAWAIIAN CULTURE	EDUCATION	FAMILY	DEVELOPMENT	LAND	HIGHER PRICES	LIVING OFF THE LAND	TOURISM	ELECTRICITY SELF-SUFFICIENCY	SLOW PACE	PREFERRED WAY OF LIFE	YOU
YOU																0
PREFERRED WAY OF LIFE															0	25
SLOW PACE														0	31	44
ELECTRICITY SELF-SUFFICIENCY													0	63	56	50
TOURISM												0	74	86	83	60
LIVING OFF THE LAND											0	102	54	30	43	59
HIGHER PRICES										0	89	35	66	78	86	69
LAND									0	36	54	52	46	44	55	45
DEVELOPMENT								0	61	52	100	39	55	95	84	62
FAMILY							0	79	43	73	47	71	58	25	18	21
EDUCATION						0	33	51	45	60	72	45	55	56	41	17
HAWAIIAN CULTURE					0	47	15	92	47	79	45	80	69	16	27	37
JOBS				0	49	18	37	44	29	43	68	37	47	54	48	26
SPORTS			0	64	47	53	58	101	76	93	92	78	102	64	81	54
EVERYBODY KNOWS EVERYBODY		0	50	47	4	46	15	90	44	76	42	78	66	14	27	36
RURAL	0	24	68	63	26	67	38	104	47	80	37	91	74	16	47	58

FIGURE 2

VALUE MAP
Decision Makers